



United States Government Accountability Office

Testimony

Before the Subcommittee on Highways,
Transit, and Pipelines, Committee on
Transportation and Infrastructure, House of
Representatives

For Release on Delivery
Expected at 10:00 a.m. EDT
Thursday, June 15, 2006

INTERMODAL TRANSPORTATION

Challenges to and Potential Strategies for Developing Improved Intermodal Capabilities

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Physical Infrastructure Issues

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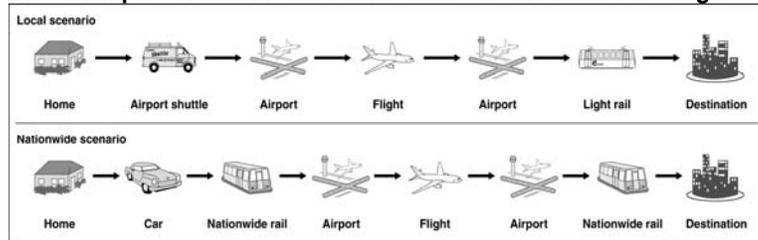
Highlights of GAO-06-855T, a testimony before the Subcommittee on Highways, Transit, and Pipelines, Committee on Transportation and Infrastructure, House of Representatives

Mobility—that is, the movement of passengers and goods through the transportation system—is critical to the nation’s economic vitality and the quality of life of its citizens. However, increasing passenger travel and freight movement has led to growing congestion in the nation’s transportation system, and projections suggest that this trend is likely to continue. Increased congestion can have a number of negative economic and social effects, including wasting travelers’ time and money, impeding efficient movement of freight, and degrading air quality. U.S. transportation policy has generally addressed these negative economic and social effects from the standpoint of individual transportation modes and local government involvement. However, there has been an increased focus on the development of intermodal transportation. Intermodal transportation refers to a system that connects the separate transportation modes—such as mass transit systems, roads, aviation, maritime, and railroads—and allows a passenger to complete a journey using more than one mode. My testimony today is based on GAO’s prior work on intermodal transportation, especially intermodal ground connections to airports, and addresses (1) the challenges associated with developing and using intermodal capabilities and (2) potential strategies that could help public decision makers improve intermodal capabilities.

A number of financing, planning, and other challenges play significant roles in shaping transportation investment decisions and the development of intermodal capabilities. Significant challenges to the development of intermodal capabilities are the lack of specific national goals and funding programs. Federal funding is often tied to a single transportation mode; as a result it may be difficult to finance projects, such as intermodal projects, that do not have a source of dedicated funding. In addition, federally funded transportation projects, including intermodal projects, face a number of planning challenges. These challenges include limits on the uses of federal funds, ensuring that widespread public participation is reflected in decisions, physical and geographic land constraints, and the difficulty coordinating among multiple jurisdictions in transportation corridors. Finally, intermodal capabilities, while offering benefits to mobility, may need to develop a demand over time.

Two general strategies developed from GAO’s prior work would help public decision makers improve intermodal capabilities. Both strategies are based on a systematic framework that includes identifying national goals, defining the federal role, determining funding approaches, and evaluating performance. The first strategy would increase the flexibility of current federal transportation programs to encourage a more systemwide approach to transportation planning and development, but would leave project selection with state and local decision makers. The second strategy is a fundamental shift in federal transportation policy’s focus on local decision making by increasing the role of the federal government in order to develop more integrated transportation networks. While the first strategy would most likely lead to a continued focus on locally determined and developed transportation projects, the second strategy could develop more integrated transportation networks, either nationwide or along particularly congested corridors. The second strategy could be costly, and high benefits, which may be difficult to achieve, would be needed to justify this investment.

Two Examples of Intermodal Connections for an Airline Passenger



Source: GAO.

www.gao.gov/cgi-bin/getrpt?GAO-06-855T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Katherine Siggerud, (202) 512-2834, siggerudk@gao.gov.

Mr. Chairman and Members of the Subcommittee:

Mobility—that is, the movement of passengers and goods through the transportation system—is critical to the nation’s economic vitality and the quality of life of its citizens. Mobility provides people with access to goods, services, recreation, and jobs; provides businesses with access to material, markets, and people; and promotes the movement of personnel and material to meet national defense needs. However, increasing passenger and freight travel has led to growing congestion in the nation’s transportation system, and projections of future passenger travel and freight movement suggest that this trend is likely to continue. For example, the number of airplane passengers using U.S. airports is expected to grow from over 746 million in 2005 to almost 1 billion by 2015 and, since most travelers use cars, whether privately owned or taxis, to get to the airport, local cities and communities will face increased congestion on their airport access roads and highways. In addition, freight traffic on roadways has increased fourfold over the last two decades, and both rail and highway congestion are particularly severe in urban areas where ports for international trade are located. For example, in the Los Angeles area, freight traffic is projected to more than double along the two mainline freight railroads from 2003 to 2025. Increased congestion can have a number of negative economic and social effects, including wasting travelers’ time and money, impeding efficient movement of freight, and degrading air quality. These effects are especially problematic in areas and transportation corridors that are already heavily congested. Such congestion may be relieved by intermodal transportation options—that is a system that connects the separate transportation modes and allows a passenger or freight to complete a journey using more than one mode, such as bus, air, rail, and waterways.

Comment [GAO1]: A-4 p. 1 r1

Comment [GAO2]: A-5 p. 2 r1 & p. 3 r1

Comment [GAO3]: A-4 p8 r1

Our past work has shown that the development of intermodal capabilities can provide a range of benefits. Those benefits include potentially reduced travel times and costs for travelers and freight by providing alternative transportation options and eliminating freight “chokepoints” or bottlenecks at entrances to freight facilities, and reduced road congestion with the potential for an associated reduction in vehicle emissions and improved air quality. Intermodal transportation capabilities are typically initiated by state and local transportation agencies, including some combination of state departments of transportation, local transportation planning bodies (i.e., metropolitan planning organizations), airports, seaports, and local transit agencies. The federal government’s role is primarily one of funding and oversight through separate transportation programs within the Department of Transportation (DOT). My testimony today is based on our prior work on intermodal transportation, and addresses (1) the challenges associated with developing and using intermodal capabilities and (2) potential strategies that could help public decision makers improve intermodal capabilities. In particular, I will be drawing a number of examples from our July 2005 report on ground access and intermodal connections at airports.¹ (See Related GAO Products.)

In summary:

¹GAO, *Intermodal Transportation: Potential Strategies Would Redefine Federal Role in Developing Airport Intermodal Capabilities*, GAO-05-727 (Washington, D.C.: July 26, 2005).

- Financing, planning, and other challenges play important roles in shaping transportation investment decisions and the development and use of intermodal capabilities. Significant challenges are the lack of specific national goals and funding programs to develop intermodal capabilities. Federal funding is often tied to a single transportation mode; as a result it may be difficult to finance projects, such as intermodal projects, that do not have a source of dedicated funding. This may also make it difficult to use federal funds to finance the best transportation investment, regardless of mode, to improve mobility. In addition, federal transportation projects, including intermodal projects, face a number of planning challenges that include limits on the uses of federal funds, ensuring that widespread public participation is reflected in decisions, physical and geographic land constraints, and the difficulty in coordinating among multiple jurisdictions in transportation corridors. Finally, intermodal capabilities, while offering benefits to mobility, may need to develop a demand over time. For example, in the case of ground access to airports, most passengers may prefer to use private vehicles to access airport over transit options.
- Two general strategies could help public decision makers improve intermodal options. Both of these strategies are based on a systematic framework that includes identifying the federal interest in and national goals for transportation, defining the federal role, determining funding approaches, and evaluating performance. In the first strategy, Congress would increase flexibility within current federal transportation programs to encourage the development of intermodal capabilities and transportation investments that offer the best mobility improvements by shifting federal transportation funding, which is generally focused on individual transportation modes, to a more systemwide approach across all modes and types of travel. This strategy would include having the federal government develop approaches to focus funding on transportation investments that better focus on outcomes related to national goals and promote better coordination between jurisdictions. The second strategy is a fundamental shift in federal transportation policy's long-time focus on state and local decisionmaking by increasing the role of the federal government in planning and funding intermodal projects in order to develop more integrated transportation networks, either nationwide or along particularly congested corridors. To develop a nationwide intermodal system, the federal government could take on a role similar to its efforts to develop the interstate highway system. A more active federal government role might also require additional federal funding responsibilities. For example, if the federal government were to take a more active role in developing airport intermodal capabilities that included enhancing or expanding rail service or developing high-speed rail corridors, it might also need to increase its funding role, and the role of other beneficiaries of the service, due to its high cost.

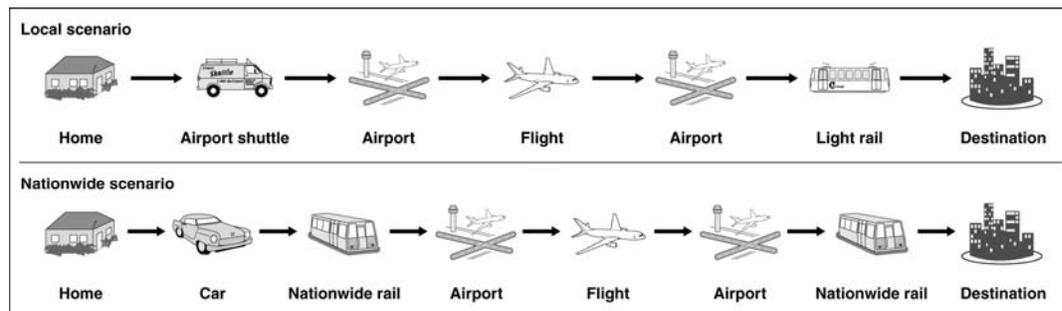
Background

Historically, federal transportation policy has generally focused on individual modes rather than intermodal connections between different modes. Federal transportation funding programs are overseen by different modal offices within DOT—the Federal Aviation Administration (FAA), Federal Transit Administration (FTA), Federal Railroad

Administration, and Federal Highway Administration (FHWA). No specific federal funding programs have been established that target intermodal projects for either passengers or freight although a few federal programs offer flexibilities that would allow these types of projects.

Intermodal transportation refers to a system that connects the separate transportation modes—such as mass transit systems, roads, aviation, maritime, and railroads—and allows a passenger or freight to complete a journey using more than one mode. For example, an efficient intermodal capability at an airport would provide a passenger with convenient, seamless transfer between modes; the ability to connect to an extended transportation network; and high frequency of service among the different modes. As shown in figure 1, an intermodal connection at an airport might involve a passenger arriving at the airport by private shuttle service, flying to another airport, and then transferring to local rail service² or a nationwide system, such as Amtrak, to reach a final destination. Similar to airline passengers, an intermodal freight transportation system relies on ready transport of cargo between ships and other transportation modes, particularly highway and rail.

Figure 1: Two Examples of Intermodal Connections for an Airline Passenger



Source: GAO.

The scope and nature of intermodal passenger connections is further illustrated by ground access to airports. In 2005, we reported that most major U.S. airports have direct intermodal ground connections to either local transportation systems or nationwide bus or rail networks.³ Sixty-four of the 72 airports⁴ that we surveyed reported having direct connections⁵ to one or more local transportation systems in their area, such as local bus

² Local transit rail includes commuter rail, light rail, subway systems, and trolleys.

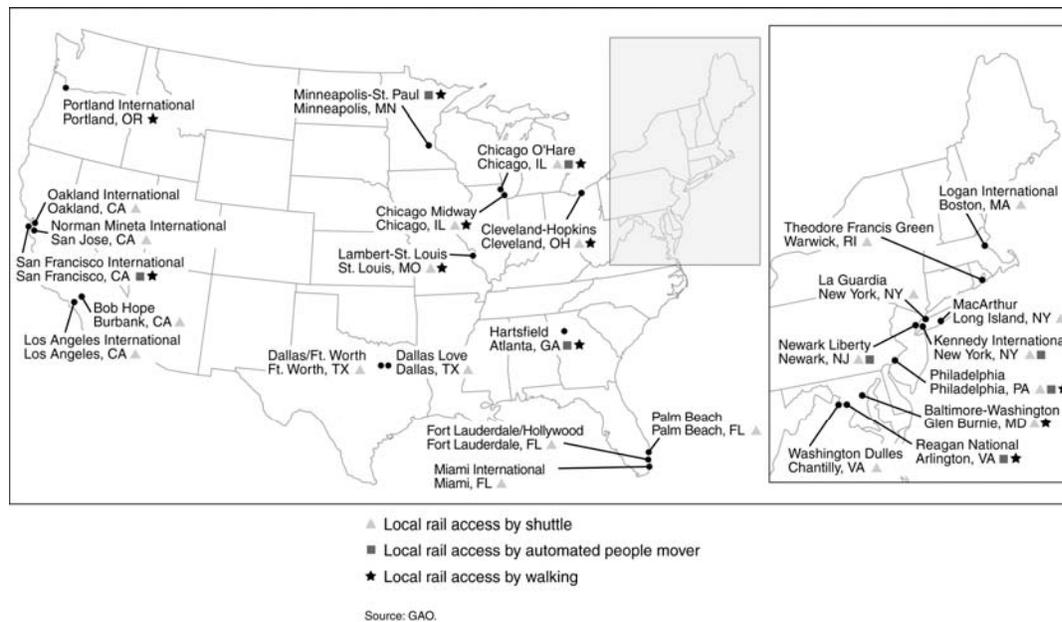
³ GAO-05-727.

⁴ We surveyed all 68 large and medium hub U.S. airports, and those small hub airports (4 in total) that are located in the same metropolitan statistical area as one or more large or medium hub airports.

⁵ We considered a transfer point (such as a bus stop or rail station) to be a direct connection to the airport if (1) it was convenient for an average adult with luggage to walk to the transfer point from any of the airport's terminals; (2) the airport had an automated people mover that transports passengers from the transfer point to any of the airport's terminals; or (3) there was regular, fixed-route shuttle service from the transfer point to any of the airport's terminals.

or rail service, with 26 airports reporting having both. The most common type of public transportation system available to and from the airport is local bus service. Sixty-four airports reported having a direct connection to a local bus service. However, the level of bus service varies depending on the airport. For example, Seattle-Tacoma International Airport has five public bus routes that serve the surrounding communities, while General Mitchell International Airport in Milwaukee has only one route that serves the airport. Twenty-seven airports reported having a direct connection to a local rail system, such as light rail, commuter rail, or subway. (See fig. 2.)

Figure 2: Major U.S. Airports with Direct Connections to Local Rail Systems



While most major U.S. airports are located in metropolitan areas that have stations for nationwide transportation systems, such as Greyhound or Amtrak, 20 airports reported having direct connections to nationwide bus service or nationwide passenger rail service. Twelve of the 20 airports reported having direct connections to nationwide bus service, and 14 airports reported having a direct connection to Amtrak rail service. (See fig. 3.) All 14 airports provide shuttle service to transport passengers to Amtrak stations that serve the metropolitan area. One of the 14 airports—Newark’s Liberty International Airport—reported that passengers could also access the Amtrak station by an automated people mover. In addition, the accessibility of Amtrak to Newark airport has allowed Continental Airlines to establish a code share agreement with Amtrak, whereby passengers can purchase one ticket for a journey that includes travel by both air and rail.⁶

⁶Code sharing refers to the practice of airlines applying their own names and selling tickets to flights or rail service operation by other carriers.

This agreement has allowed Continental Airlines to eliminate some short-haul flights from Newark.⁷

Figure 3: Major U.S. Airports with Direct Connections to Amtrak’s Nationwide Rail Systems



While there is no single federal funding source for rail to airport projects, we found that local governments, airports, and transit systems were able to tap and package a variety of federal funds to pay for recent rail connections to airports. These included direct appropriations, the New Starts program for fixed guideway transit systems, two federal aid highway categories—the Congestion Mitigation and Air Quality Improvement Program and the Surface Transportation Program—and passenger facility charges at airports. Appendix I describes these programs.

Several Significant Challenges Affect the Development and Use of Intermodal Capabilities

According to transportation research, planning officials, and our prior work, a number of financing, planning, and other challenges play important roles in shaping transportation investment decisions and the development of intermodal capabilities. Significant

⁷Continental officials stated that in April 2003, they reinstated limited air service between Newark and Philadelphia because of market demand.

challenges to the development of intermodal capabilities are the lack of specific national goals and funding programs. Federal funding is often tied to a single transportation mode; as a result it may be difficult to finance projects, such as intermodal projects, that do not have a source of dedicated funding. Federal legislation⁸ and federal planning guidance all emphasize the goal of establishing a systemwide, intermodal approach to addressing transportation needs. However, the reality of the federal funding structure—which directs most surface transportation spending to highways and transit and is more oriented to passengers than freight—plays an important role in shaping local transportation investment choices.⁹ In addition to the focus on highways and transit over other investment choices, we found limited instances in which investment decisions involved direct trade-offs in choices between modes or users—such as railroad versus highway or passenger versus freight.¹⁰

Comment [GAO4]: A-2 p29 r1

A significant challenge to developing certain intermodal connections is the difficulty of securing funding within the mode-specific federal funding structure. The cost of intermodal projects can vary widely, depending on the complexity and scope of the project. In addition, measuring and forecasting the benefits from individual projects can be hard to quantify, and we found only anecdotal evidence of benefits for the 16 intermodal projects we examined.¹¹ The costs of rail projects are typically substantial and can include costs to construct a station, as well as track and other infrastructure to support the rail network. Table 1 provides examples of the costs of intermodal projects at airports and funding sources. We found that many intermodal projects at airports fit the funding criteria for one or more federal programs focused on surface transportation or aviation. For example, FTA's New Starts program is a significant source of funding for intermodal capabilities at airports that are part of a rail transit system. However, the rigorous rating process and increasing demands for its limited funds make the New Starts program time-intensive and competitive in nature and has made it difficult for local transportation agencies to secure this funding, according to local officials that we spoke with. Federal funding programs, like the New Starts program, will contribute only a portion of the total project costs, subject to local matching funds, which can be derived from local agencies such as metropolitan transportation

⁸The Intermodal Surface Transportation Efficiency Act of 1991; the Transportation Equity Act for the 21st Century, enacted in 1998; and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, enacted in 2005.

⁹While most federal funding sources and programs are linked to highway or transit uses, some funding flexibility between highway and transit is allowed under programs such as the National Highway System, Surface Transportation Program, and Congestion Mitigation and Air Quality Improvement Program. Federal programs provide limited support for investment in railroad infrastructure.

¹⁰GAO, *Surface Transportation: Many Factors Affect Investment Decisions*, GAO-04-744 (Washington, D.C.: June 30, 2004).

¹¹Our case study airport locations were Baltimore-Washington International, General Mitchell International, John F. Kennedy International, La Guardia, Los Angeles International, Metropolitan Oakland International, Miami International, Minneapolis/St. Paul International, Newark Liberty International, Norman Y. Mineta San Jose International, Ontario International, Portland International, Ronald Reagan Washington National, San Francisco International, Seattle-Tacoma International, and Washington Dulles International. The airports were selected to provide a range of airport sizes (medium and large), planned or existing types of intermodal service, and geographic locations.

authorities, transit agencies, and airport authorities.¹² However, local transportation officials said it can be difficult to secure local funds for intermodal projects at airports because these agencies could potentially have different funding priorities, making it difficult to build the unified local support necessary to secure funding.

¹² For selected New Starts projects, a maximum of 80 percent federal contribution to total project costs can be funded, but projects that request a maximum federal share of 60 percent of the project's total cost receive higher priority.

Table 1: Examples of Intermodal Project Costs and Funding Sources

Dollars in millions

Project description	Capital costs ^a	Funding sources
Construction of a new Amtrak rail station adjacent to and serving Milwaukee's General Mitchell International Airport, and improvements to the existing rail line, which already provided service between Milwaukee and Chicago	\$6.8 ^b	<ul style="list-style-type: none"> • Two separate annual federal appropriations • Wisconsin Department of Transportation
5.5-mile light rail line (Metropolitan Area Express) extension to existing rail line to provide service between city center and Portland (Oregon) International Airport	\$154 ^c	<ul style="list-style-type: none"> • Tri-Met (local transit agency) • Airport passenger facility charges • City of Portland • Cascades Development Corporation (a private land development corporation)
New light rail system (Hiawatha Light Rail) providing service between downtown Minneapolis and the Mall of America, with 2 stations located at Minneapolis/St. Paul International Airport	\$715.3 ^d	<ul style="list-style-type: none"> • New Starts • Congestion Mitigation and Air Quality grant • Hennepin County Regional Rail Authority • Metropolitan Airports Commission

Source: GAO analysis of interviews conducted with, and documents provided by, airport and transportation officials.

^aCapital costs are approximations as reported by airport or local transportation officials.

^bAmount is expressed in 2005 dollars and includes the construction of a new building, boarding platform, canopy, parking facility, and several miles of rail improvements, including upgraded rail technology.

^cAmount is expressed in 2001 dollars and includes engineering, design, vehicle acquisition, and construction and system installation.

^dAmount is expressed in nominal dollars (1999-2004) and includes costs for the engineering, design, acquisition of 24 vehicles, construction and 12-mile system installation, 17 stations, and tunnel construction to access the two airport stations.

Additionally, intermodal capabilities at airports can be funded with passenger facility fees, commonly referred to as PFCs.¹³ Local transportation officials also described difficulties in securing the use of PFCs. In particular, requirements that PFC funds be used for projects on airport property, among other criteria, are seen as limiting their use for intermodal projects. Moreover, airlines support these restrictions on the use of PFC funds, believing that these funds are for airport development and capacity improvements, and not ground-access projects. However, even with this restriction, we reported in July 2005 that four airport authorities were using PFC funds to develop or contribute to intermodal projects at airports, as shown in table 2.

¹³PFCs are fees up to \$4.50 paid by airport passengers, which are used to finance airport capital improvements.

Table 2: Selected Examples of Intermodal Rail Projects Funded by Passenger Facility Charges (PFC)

Dollars in millions^a

Location	Project description	Funding amounts from PFCs
Portland, Ore.	Light rail extension and new station at Portland International Airport	\$43
Newark, N.J.	People mover system 1-mile connection from Newark Liberty International Airport to new Northeast Corridor rail station	\$357
New York, N.Y.	People mover system 3-mile connection from John F. Kennedy International Airport to two transit rail stations	\$1,326
St. Louis, Mo.	On-airport transit station at St. Louis Lambert Field International Airport	\$4

Source: GAO analysis of FAA data.

Note: These projects have been approved by FAA and airports have begun collecting PFC funds. FAA has approved the use of PFC funds for additional projects for which airports have not yet started collection PFC funds.

^aFunding amounts are rounded to the nearest million.

In addition to the limits on the use of federal funds, federal transportation projects, including intermodal projects, face a number of planning challenges including the following:

- Decision makers must ensure that wide-ranging public participation is reflected in their deliberations and that their choices take into account numerous views. During the planning of an intermodal project, the lead local agency’s responsibilities include soliciting public comment regarding the most appropriate project to select for the area. This public participation can introduce considerations such as quality of life and other issues that are difficult to quantify in making transportation choices. It also puts decision makers in the position of balancing different public agendas about funding and values.
- The physical constraints of an area may present a challenge to building intermodal facilities. The development of intermodal capabilities at airports provides an example of this challenge. On the one hand, our work has found that densely populated urban areas offer few alternatives for expansion or new project development. On the other hand, it is these same densely populated urban areas where rail connections to airports are more likely to generate benefits that will justify the costs, as these areas may have high levels of congestion and larger numbers of people willing to use public transportation to access airports as a result. For example, since the proposed light rail line into the Minneapolis/St. Paul International Airport crossed land owned by various federal agencies, the process to gain the needed right-of-way was a multiagency effort that required significant coordination, adding somewhat to the project planning time and costs.

- Multijurisdictional transportation corridors present special challenges in coordinating investment decisions. Getting the cooperation of and coordination between these different officials can make the planning and implementation of multistate and multiregional projects difficult. For example, during the planning of the Seattle light rail, Sound Transit officials noted that the alignment from downtown Seattle to the Seattle-Tacoma International Airport ran through a number of surrounding cities and required three local cities to approve permits for the construction of the project.

Comment [GAO5]: A-2 p. 37 r2

The effective use of passenger rail as an intermodal option along heavily traveled air and highway corridors also poses challenges due to limitations of the existing nationwide rail network. For example, Amtrak's passenger rail network does not support air-rail service requirements because rail lines do not go near some airports, passenger train schedules in some parts of the country are not frequent enough to effectively link to airline flight schedules, and transferring from air to rail poses inconveniences that limit consumer demand. As we discussed previously, although 14 airports reported having a direct connection to Amtrak's passenger rail service, 1 reported that passengers could access the station by automated people movers—others required boarding a shuttle. In addition, although Amtrak track lines are adjacent to the Cleveland Hopkins International Airport, Amtrak officials stated that Amtrak trains run only twice a day along this line, which is not frequent enough to establish a code share agreement with an airline.

Furthermore, transportation industry experts and European transportation officials have pointed out that high-speed passenger rail, including connections to congested airports, has provided an alternative for air travel in short-haul markets in Europe. There has been a reduction of air service between Paris, France, and Brussels, Belgium—a popular short distance city pair for travelers—due, in part, to the high-speed train service linking Paris Charles de Gaulle Airport and downtown Paris with Brussels. In the United States, few efforts have been made to use rail service to complement air service in this manner because, in part, the cost of establishing service is not likely to justify its benefits given that some distances are too great for rail to provide an attractive alternative transportation mode.

Finally, intermodal capabilities, while offering benefits to mobility, may need to develop a demand over time. For example, the development and use of intermodal connections at airports can be limited by the inability of the ground connections to meet the preferences of airline passengers, therefore, the majority of passengers still use private vehicles to access airports even when transit service is available. Passenger preferences can include seamless transitions from one mode to another; a simplified process to handle baggage; transit schedules that meet consumer demands; and clear, easy-to-follow information on accessing transportation options—including signs at airports and information at hotels on accessing transit to airports. In addition, passengers, particularly those traveling with children and large amounts of luggage, may not consider using transit or rail systems to complete their travel plans due to inconvenience.

Two General Strategies Could Help Address Intermodal Financing and Planning Challenges

Two general strategies could help public decision makers improve intermodal options. These strategies are based on a systematic framework that has the following three components:

- Set national goals for the system. These goals, which would establish what federal participation in the system is designed to accomplish, should be specific and measurable.
- Clearly define the federal role relative to the roles of state and local transportation agencies and the private sector. The federal government is one of many stakeholders involved in the development of intermodal capabilities. This component is important to help ensure that the federal role supplements and enhances the participation of other stakeholders and appropriately balances public investment when the benefits flow in part to the private sector.
- Determine which funding approaches—such as alternatives to investment in new infrastructure and those approaches that reward projects that advance national/federal goals—will maximize the impact of any federal investment. This component can help expand the ability to leverage funding resources and promote shared responsibilities. Given the current budgetary environment, and the long-range fiscal challenges confronting the country, substantial increases in funding for transportation projects will require a high level of justification.

In addition, either strategy would be enhanced by a process for evaluating performance periodically to determine if the anticipated benefits from federally-funded projects are accruing as expected.

In the first strategy, Congress could encourage the development of intermodal capabilities by increasing the flexibility with current federal transportation programs, which are largely focused on individual transportation modes, to a more systemwide approach across all modes and types of travel. To promote intermodal development, the federal government could consider several alternatives for transportation planning and funding that might better focus on these outcomes and promote better coordination between jurisdictions. These alternatives include the following:

- Increasing the flexibility of federal transportation funding programs to help break down the current funding stovepipes.
- Applying different federal matching criteria for different types of expenditures in order to provide a higher level of federal matching for projects that reflect federal priorities.
- Establishing performance-oriented funding or a reward-based system that would favor those entities that address the national interest and meet established intermodal goals.

- Expanding support for alternative financing mechanisms—such as providing credit assistance to state and local governments for capital projects and using tax policy to provide incentives to the private sector for investing in intermodal capabilities—to access new sources of capital and stimulate additional investment in intermodal capabilities.
- Aligning incentives for planning agencies to adopt best practices and to achieve expectations.

While this strategy would involve changes in federal transportation policy, it would most likely not involve a major shift in the federal role, which would continue to be focused on funding and oversight of locally determined and developed transportation projects. However, since this strategy would include the goal of establishing a more systemwide approach to transportation planning, the federal government would need to determine the scope of its involvement in encouraging such an approach.

The second strategy is a fundamental shift in federal transportation policy's long-time encouragement of state and local decisionmaking by increasing the role of the federal government in planning and funding intermodal projects in order to develop more integrated intermodal networks, either nationwide or along particularly congested corridors. This strategy could be similar to the strategy the federal government used in the 1950s to develop the interstate highway system. Under this strategy, Congress could establish national goals for the development of intermodal capacities that could include not only the development of facilities and connections, but also the development of a supporting transportation network to improve the ability of either passengers or freight companies to reach their final destination. The role of the federal government would change, with the federal government taking a more active role in setting priorities and planning of intermodal connections between the individual transportation modes. Similar to the development of the interstate highway system, the federal government's role could include providing project specific oversight, laying out routes, overseeing construction, and ensuring that the system is adequately maintained.

For the federal government to take a more active role in developing intermodal capabilities, it might also need to take on additional funding responsibilities. An example would be if a federal policy were established to develop a transportation system that promoted connections between airports and high-speed rail networks, as in Europe.¹⁴ To accomplish improved air-rail connections, the federal government would have to increase its funding role due to the high costs of enhancing or expanding rail service or developing high-speed rail corridors or tap others that would benefit from such service, including the region, its airport, and businesses associated with the airport as possible funding sources. The full costs of this policy would be dependent on how integrated and expansive such an intermodal network would be and whether it would include additional high-speed rail or

¹⁴In several cases, European national governments have established policies to reduce the number of short-haul flights at their major airports and have supported these policies by funding high-speed rail infrastructure.

be focused on conventional passenger rail service. We have shown in the past that both of these choices are costly and increased federal involvement could require the implementation of a dedicated funding source.

However, even if a revenue source is established, this new funding would face many of the same revenue challenges that other transportation systems, such as highways, are facing now as revenues sources are eroded. Additionally, given the high costs of this strategy, benefits high enough to justify investment in intermodal facilities would likely be anticipated in a limited number of places.

Concluding Observations

Increasing passenger travel and freight movement have led to growing congestion, and decision makers face the challenge of maintaining the nation's mobility while preventing congestion from overwhelming the transportation system. Successfully addressing mobility needs in the face of growing congestion requires both strategic and intermodal approaches. However, the current system for planning and financing transportation is not well-suited to advancing intermodal transportation projects—including both passenger and freight transportation—calling for fundamental changes that use a broader, systemwide approach to transportation investment decisions. A federal strategy of encouraging a more systemwide approach to transportation planning, including alternative funding mechanisms, could encourage transportation officials to consider the development of additional intermodal connections in the context of other transportation investment decisions. At the same time, it is clear that more quantitative evaluations of the costs and benefits of intermodal capabilities could help to better inform state and local, as well as federal decision makers, as they attempt to determine which projects to develop with their limited resources.

Mr. Chairman, and members of the Subcommittee, this concludes my prepared statement. I would be pleased to answer any questions you or other members of the Subcommittee might have.

GAO Contact and Staff Acknowledgments

For information on this testimony, please contact Katherine Siggerud at (202) 512-2834 or siggerudk@gao.gov. Individuals making key contributions to this testimony are Teresa Spisak and Tim Schindler.

Federal Programs That Can Fund Intermodal Projects at Airports

Program	Description	Example of use at airports
New Starts (FTA)	Selects worthy fixed guideway transit projects for funding by congressional appropriations. Projects can include heavy, light, and commuter rail and certain bus transit projects (such as bus rapid transit). To be eligible for funding, projects must, among other things, be justified based on a comprehensive review of mobility improvements, environmental benefits, cost effectiveness, and operating efficiencies, as well as being supported by an acceptable degree of local financial commitment. The program funding match is at most 80 percent federal and 20 percent local. ^a In fiscal year 2006, this program was funded at \$1.2 billion.	<p>Bay Area Rapid Transit extension south of the San Francisco International Airport into San Mateo County</p> <p>New light rail system (Hiawatha Light Rail) providing service between downtown Minneapolis and the Mall of America, with two stations located at Minneapolis/St. Paul International Airport</p>
Congestion Mitigation and Air Quality Improvement Program (joint FHWA and FTA)	Funds transportation projects and programs in order to reduce transportation-related emissions in localities with poor air quality. To be eligible for funding, projects must be transportation related, in nonattainment or maintenance areas, ^b and reduce transportation-related emissions. The program funding match is 80 percent federal and 20 percent local. In fiscal year 2006, this program was funded at \$1.7 billion.	Hiawatha Light Rail service between downtown Minneapolis and the Minneapolis/St. Paul International Airport
Surface Transportation Program (FHWA)	Provides funding to states and localities for projects on any federal-aid highway—including transit capital projects and local and nationwide bus terminals and facilities. The program funding match is 80 percent federal and 20 percent local. In fiscal year 2006, this program was funded at \$6.3 billion.	Miami Intermodal Center at the Miami International Airport
Transportation Infrastructure Finance and Innovation Act of 1998 (joint FHWA/FTA)	Provides federal credit assistance for surface transportation projects. Project sponsors may include public, private, state, or local entities. Projects eligible for federal assistance through existing surface transportation programs, including passenger bus and rail facilities, are eligible for credit assistance under this program. The amount of federal credit assistance may not exceed 33 percent of the reasonably anticipated project cost. In fiscal year 2006, this program was funded at \$130 million.	Miami Intermodal Center at the Miami International Airport
Airport Improvement Program (FAA)	Provides grants to airports for planning and development projects. The program is funded, in part, by aviation user excise taxes, which are deposited into the Airport and Airway Trust Fund. In terms of promoting intermodal capabilities, these funds may be used for access roads that are on airport property, airport owned, and exclusively serve airport traffic. The program funding match is 75 to 90 percent federal based on the number of enplanements ^c at the airport and the remainder is from local sources. In fiscal year 2006, this program was funded at \$3.5 billion.	We found no example of its use for intermodal projects.

Passenger facility charges (FAA)	Authorizes commercial service airports to charge passengers a boarding fee—commonly called a passenger facility charge—of up to \$4.50, after obtaining FAA approval. The fees are used by the airports to fund FAA-approved projects that enhance safety, security, or capacity; reduce noise; or increase air carrier competition. In calendar year 2005, \$2.4 billion in fees were collected under this program.	AirTrain automated people mover at New York’s John F. Kennedy International Airport and Newark’s Liberty International Airport Light rail extension and new station at Portland International Airport
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Source: GAO analysis of DOT information.

^a When evaluating New Starts proposals, FTA places greater priority on projects that have a greater local matching share. Competitive New Starts proposals often have a 40-50 percent local match.

^b Federal air quality standards exist for certain common air pollutants (known as criteria pollutants). Geographic areas that have levels of a criteria pollutant above those allowed by the standards are called nonattainment areas. Areas that did not meet the standards for a criteria pollutant in the past but have reached attainment are known as maintenance areas.

^c An enplanement is defined as a passenger boarding a flight. Enplanements include passengers boarding the first flight of their trip, as well as passengers who board after connecting from another flight.

Related GAO Products

Freight Transportation: Short Sea Shipping Option Shows Importance of Systematic Approach to Public Investment Decisions. GAO-05-768. Washington, D.C.: July 29, 2005.

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